



environmental consultants, inc.

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m/023/007
North Lily Mining Co.

April 4, 2000

Mr. Don Ostler, P.E.
Director
Utah Division of Water quality
288 North 1460 West
P.O. Box 144870
Salt Lake City, Utah 84114-4870

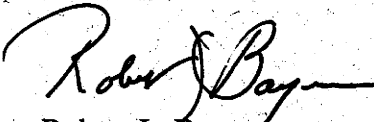
Via Telecopier

Re: Notice of Violation and Order, Docket No. UGW-20-04, Order 3: Excess Water Management Plan

Dear Mr. Ostler:

Attached please find North Lily Mining Company's (North Lily) "Excess Fluid Management Plan" for its Silver City, Utah facility. This plan has been prepared by JBR Environmental Consultants, Inc. on behalf of and in conjunction with North Lily. This document is intended to accompany the response to items nos. 1 and 3 of the Order that was submitted today by Mr. H. Michael Keller, legal counsel for North Lily.

Sincerely,


Robert J. Bayer
Vice President

RECEIVED

APR 06 2000

DIVISION OF
OIL, GAS AND MINING

cc: Mr. Ostler, via U.S. Mail
Stephen Flechner, North Lily Mining Company
Mike Keller, VanCott Bagley
[Redacted] Division of Oil Gas and Mining

0012

NORTH LILY MINING COMPANY EXCESS FLUID MANAGEMENT PLAN

North Lily Mining Company (North Lily) has prepared this Excess Fluid Management Plan in response to Order 3 of the Utah Division of Water Quality's (DWQ) Notice of Violation and Order, Docket No. UGW20-04.

Background

North Lily Mining Company has been managing fluids in its Silver City, Utah former gold heap leach facility by recirculation and enhanced evaporation for the last three years. During that period of time seasonal fluctuations in fluid inventory volume occurred. Since last fall, enhanced evaporation by spray application has been conducted continuously. Since last fall, fluids returning to the pregnant solution pond from the heap have been contained in the pregnant solution pond by successful operation of the enhanced evaporation and solution pump-back activities. Fluid levels in the pregnant solution pond appear to have peaked in early March 2000 (see attached graph) and have begun to decline since that time, according to daily water level observations made at the facility. Since Fall 1999, fluids have not flowed out of the pregnant solution pond to the barren pond.

Proposed Plan for Fluid Management

The fluid level information presented above demonstrates that the current recirculation and enhanced evaporation practices have been successful in containing the heap leach fluids in the leach pad and pregnant solution pond. Clearly, the benefit of further improving enhanced evaporation at the facility would be to more rapidly reduce the fluid inventory, since the system as it is now operated is able to handle the apparently declining fluid inventory. Past experience at the facility along with the water balance information provided DWQ in North Lily's November 24, 1999 letter suggests that excess fluid inventory will not be a problem for the facility through the third quarter of this year.

North Lily intends to complete pad regrading, topsoil application and seeding during the third and fourth quarters of 2000. In order to do so, the heap must be sufficiently dried so that wheeled equipment can work on the pad surface. In addition, some value to revegetation success might be gained by ceasing fluid application to the pad surface and allowing precipitation to "rinse" the pad surface to reduce the concentrations of salt in the upper few inches. Following reclamation earthwork and seeding, continued heap draindown (at a rate that has not been estimated) will undoubtedly occur. Since re-application of this high-TDS (total dissolved solids) water will no longer be an option after the topsoil cover has been placed, the issue of "excess fluid" will recur at that time.

To achieve the objectives of ceasing fluid applications to the pad surface as soon as practicable and having in place the capability to handle excess fluids during fourth quarter 2000 and beyond, North Lily proposes, subject to a discussion of this and alternative means of managing excess

fluids with DWQ and the Division of Oil Gas and Mining (DOGM), to install an in-pond enhanced evaporation system. This system would be installed in the pregnant solution pond which, of the three ponds on site has the best overall liner integrity. This system would be designed with sufficient capacity to allow fluid application to the pad to cease no later than July 31, 2000. Thereafter, during reclamation earthwork and seeding, aggressive enhanced evaporation would be conducted using the in-pond evaporation system. This system would be maintained in operating condition and operated as necessary through mid-2001 or until a means of post-reclamation fluid disposal is agreed upon by DWQ, DOGM, and North Lily, whichever is sooner. North Lily would like to consider either soil infiltration or some form of land application for post-reclamation fluid disposal.

The in-pond evaporation system has not yet been completely designed; however, the following design criteria and components are proposed:

- The tears and punctures in the primary liner of the pregnant solution pond would be repaired by a liner contractor. The purpose of this repair would be to create an in-tact cover to protect the underlying composite secondary liner during construction and operation of the in-pond enhanced evaporation system.
- The enhanced evaporation system will be designed to evaporate no less than 7000 gallons per day (based on the average lake evaporation rate for the second and third quarters of the calendar year for the Silver City area). This evaporation rate will enable the system to evaporate the entire volume of pad draindown when the draindown rate has been reduced to approximately 20 gallons per minute (gpm). Until that time, pump-back to the leach pad surface and enhanced evaporation there will take place simultaneously.
- High-efficiency fog emitters manufactured by Bete Fog Nozzle, Inc. will be used to provide optimal evaporation. These emitters have been very effective for enhanced evaporation applications at other operations in the West, including at least one Utah facility.
- The existing 300 gpm pump will be used to operate both the in-pond and on-pad evaporation systems. This pump will have the capability of pumping fluids to the pad surface at the current application rate while maintaining the necessary pressure (50 psi) in the in-pond system to enable optimal emitter performance.
- A backup pump with the same or similar capabilities as the existing pump will be obtained and brought to the site to ensure that pump failure will not prevent systems operation.
- Piping for the system will be high density polyethylene (HDPE). All fittings will be HDPE-compatible and resistant to corrosion.

North Lily is very interested in receiving input from both DWQ and DOGM regarding these design concepts and criteria. In particular, North Lily values and would like to benefit from the experience and knowledge of both agencies in heap leach facility closure.

North Lily Mining Company Silver City Heap Leach Facility

Pregnant Solution Pond Water Levels

